



GRADUATES **IN THE ECONOMY** 16

ENVIRONMENTAL SCAN 2016



COLLEGES | COLLÈGES
ONTARIO | ONTARIO

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TABLE OF CONTENTS

1. Highlights.....	2	4. Post-secondary graduates and the economy.....	13
2. Post-secondary educational attainment comparisons	3	4.1 Post-secondary graduates employed in Ontario industries	13
2.1 Tertiary educational attainment: Ontario, Quebec and selected countries.....	3	4.2 Self-employed by post-secondary credential	14
2.2 Increase in tertiary educational attainment: Selected countries	4	5. Matching skills to jobs.....	15
2.3 Post-secondary educational attainment: Ontario, rest of Canada and the U.S.....	5	5.1 Employment rates, selected jurisdictions, by post-secondary credential.....	15
2.4 Post-secondary educational attainment: Ontario, Quebec and leading U.S. states ..	6	5.2 Net benefits for Canadians attaining tertiary education.....	16
2.5 Apprentice completions, by age: Ontario compared to B.C.	7	5.3 Employment rates for underrepresented groups, Ontario.....	17
2.6 Educational attainment of underrepresented groups: Ontario	8	5.4 Ontario employers' plans to hire diploma graduates as the economy recovers	18
3. Educational skills and workforce training	9		
3.1 Adult literacy for selected countries... ..	9		
3.2 Adult numeracy for selected countries	9		
3.3 Adult literacy and numeracy for selected Canadian populations	11		
3.4 Job-related adult education in selected countries	12		

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1. HIGHLIGHTS

EDUCATIONAL ATTAINMENT

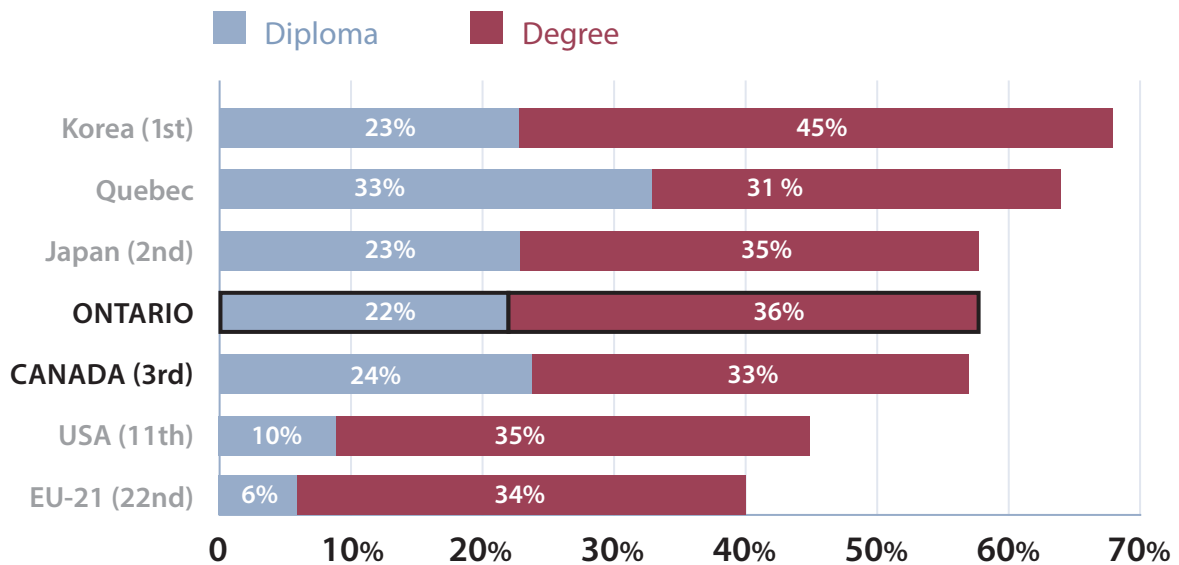
- Access to college education has provided Ontario with a post-secondary attainment rate for young adults (ages 25 to 34) that exceeds any country, except Korea or Japan, or any U.S. state:
 - On a per capita basis, three times as many Ontarians (ages 25 to 34) have career-oriented diplomas and trades certificates as Americans.
 - Among young Ontario adults with disabilities or of aboriginal background, the majority of those who have attained a post-secondary education were educated in college or trades programs.
- While college education is Canada's competitive advantage, the country cannot be complacent:
 - Canada's post-secondary attainment advantage is slipping: 20 countries with advanced economies have been raising post-secondary graduation rates at a faster pace.
 - Canada's essential skills ratings for young adults are behind the Nordic countries, Japan and Korea, and are especially low for immigrants, off-reserve aboriginals and linguistic minorities.
 - Only 15 per cent at the lowest literacy level are engaged in job-related adult education each year.

MATCHING SKILLS TO JOBS

- The Ontario colleges' trades and diploma graduates play a key role in exports (manufacturing, resources and tourism), energy, infrastructure, real estate and health care.
- The return on investment from college education for both individuals and governments in Canada average about 10 per cent, because college graduates are more likely to be employed and earn more than individuals without post-secondary credentials.
- Three-quarters of Ontario employers expect to upgrade skill requirements over the next decade.

2. POST-SECONDARY EDUCATIONAL ATTAINMENT COMPARISONS

2.1 Tertiary educational attainment: Ontario, Quebec and selected countries, population ages 25 to 34, per cent, 2014



Note 1: These data exclude OECD-defined “post-secondary non-tertiary,” i.e., post-secondary programs of one year or less, and many apprenticeship programs, that are generally included in Statistics Canada data, such as those used for chart 2.3.

Note 2: Japanese data are for 2012.

Note 3: Europe includes Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

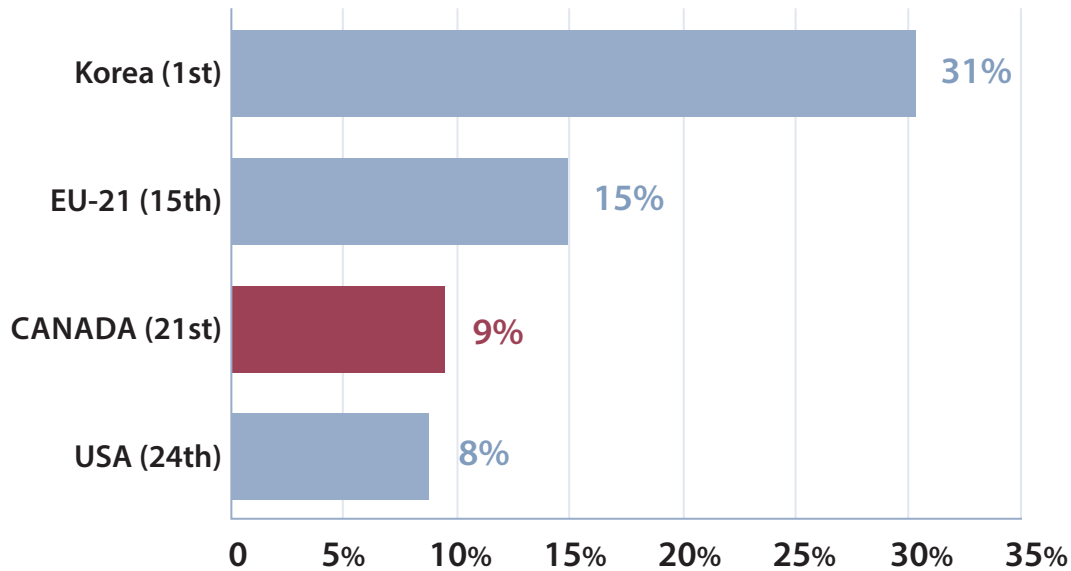
Sources: Education at a Glance 2015, table A1.3a, Percentage of adults who have attained tertiary education, by type of program and age group (2014); Colleges Ontario estimates adjusted from a Statistics Canada special tabulation, Labour Force Survey, 2014.

Ontario has one of the world’s highest post-secondary attainment rates. This provides it with a strong competitive advantage compared to the U.S. and an even stronger advantage compared to Europe.

- If Ontario were a country, its post-secondary attainment level for young adults (ages 25 to 34) would be in third place worldwide, somewhat behind Korea and Japan, but slightly ahead of Canada. In comparison, the U.S. is in 11th place, and the European average is in 22nd place.
- However, Quebec has a more robust post-secondary education system. It would rank second in the world.

Ontario’s, Korea’s and Japan’s high ratings are based largely on career-oriented programs more than twice the relative size of most advanced economies.

2.2 Increase in tertiary educational attainment: Selected countries, population ages 25 to 34, per cent, 2000-14



Note 1: These data exclude OECD-defined “post-secondary non-tertiary,” i.e., post-secondary programs of one year or less, and many apprenticeship programs, that are generally included in Statistics Canada data, such as those used for chart 2.3.

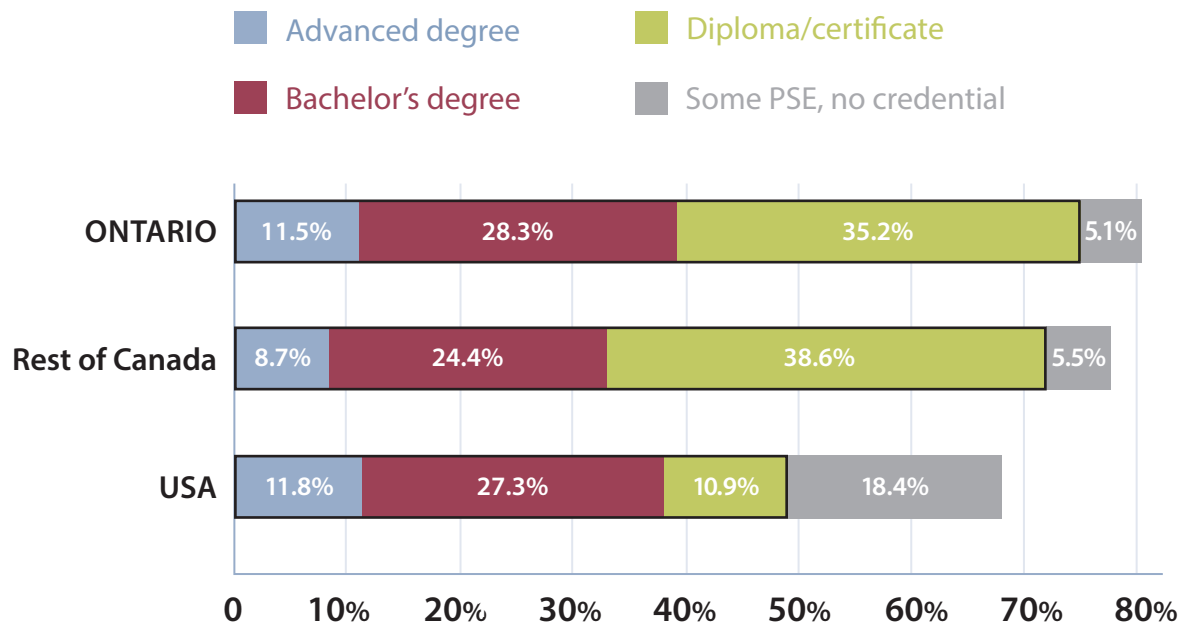
Note 2: Europe includes Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

Source: Education at a Glance 2015, table A1.4a, Trends in educational attainment, by age group (2000, 2005, 2010 and 2014).

Canada is among many countries that have recognized that higher rates of post-secondary educational attainment is key to economic growth.

However, 20 countries with advanced economies have been raising post-secondary attainment rates at a faster pace than has Canada. As a consequence, Canada’s competitive post-secondary educational advantage is eroding.

2.3 Post-secondary educational attainment: Ontario, rest of Canada and the U.S., labour force ages 25 to 34, per cent, 2015



Note: The data for 'diploma/certificate' are larger than in table 2.1 because they include "post-secondary secondary programs of one year or less, and apprenticeship programs," i.e., the standard definition for the Statistics Canada Labour Force Survey. In addition, these data are for the labour force, which has a higher share with post-secondary credentials than does the population.

Sources: Statistics Canada (special tabulation Labour Force Survey – 2015); U.S. Bureau of Labor Statistics, table 10, Employment status of the civilian non-institutional population by educational attainment, age, sex, race, and Hispanic or Latino and non-Hispanic ethnicity, annual average 2015.

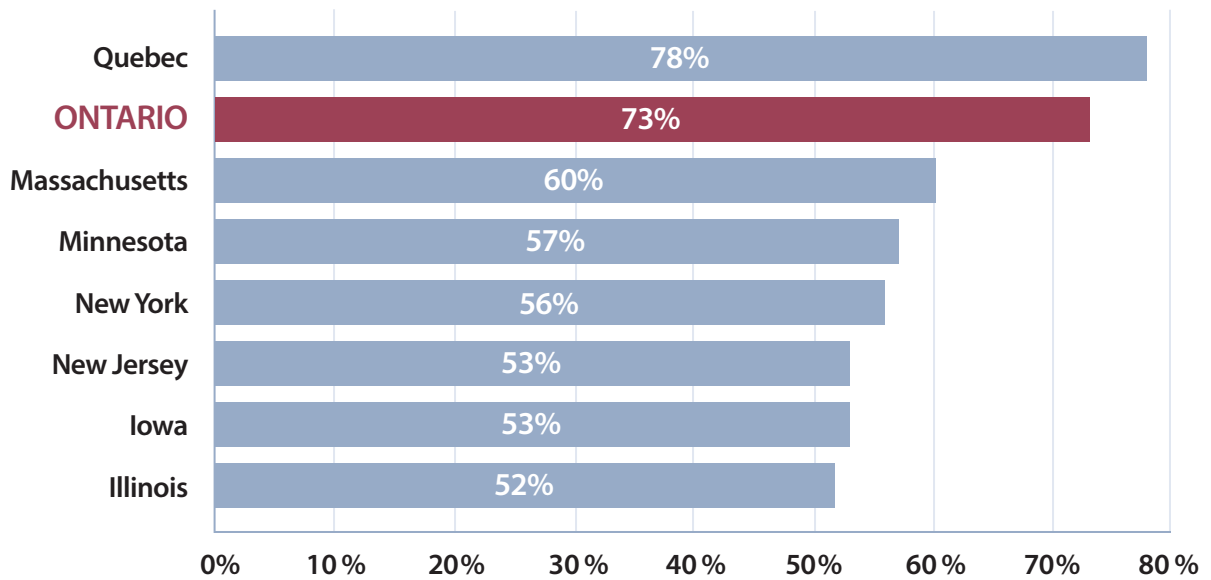
The extensive network of colleges across Canada, with their strong focus on access to career-oriented post-secondary education (PSE), provides the country with a large skills advantage compared to the U.S.

- Ontario's attainment rate for younger adults (ages 25 to 44) for diplomas and trades certificates is triple the U.S. rate, but it is below that for the rest of Canada.
- Ontario also has a higher attainment rate for degrees than the U.S. or for any other Canadian province except British Columbia.

While 27 per cent¹ of Americans who study at post-secondary institutions eventually drop out without completing a credential, the wide range of post-secondary opportunities in Ontario and the rest of Canada results in a far lower dropout rate (six and seven per cent, respectively).

¹Twenty-seven per cent is calculated as the ratio of "Some PSE, no credential" (18.4 per cent) in the above chart divided by the share of the U.S. labour force ages 25 to 34 that has attended PSE (68.1 per cent – i.e., the sum of 11.8 per cent plus 27.3 per cent plus 10.9 per cent plus 18.4 per cent). A similar calculation for Ontario results in six per cent, and for the rest of Canada, seven per cent.

2.4 Post-secondary educational attainment: Ontario, Quebec and leading U.S. states, population ages 25 to 34, per cent, 2014

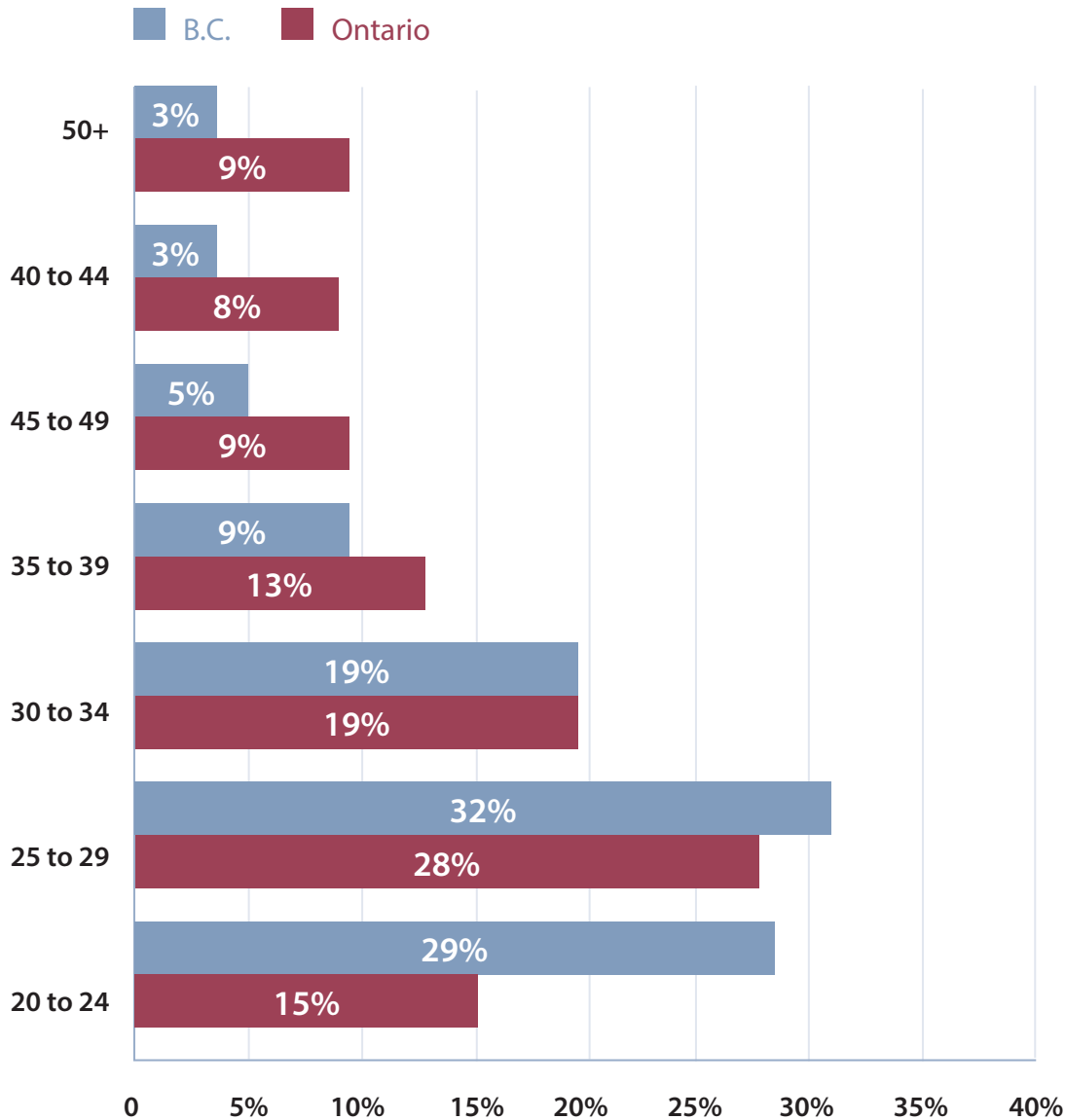


Sources: Canadian data are based on a special tabulation, Statistics Canada, Labour Force Survey, 2014. U.S. data are based on American Community Survey table B15001: Sex by age by educational attainment for the population 18 years and older, 2014, adjusted to reflect U.S. Bureau of Labour Statistics data from table 10.

The educational attainment gap among U.S. states is much greater than the gap among provinces in Canada. For young adults (ages 25 to 34), post-secondary attainment ranges from 35 per cent in Nevada to 60 per cent in Massachusetts.

All regions in Canada have significantly higher post-secondary educational attainment for young adults aged 25 to 34 than any state. The highest rate is for Quebec, with 78 per cent, while Ontario's rate is second, with 73 per cent.

2.5 Apprentice completions: Ontario compared to B.C., distribution by age, per cent, 2013



Note: Apprentice completions are measured as the number of apprentices who passed their certificates of qualification examinations in 2011 to become registered tradespersons.

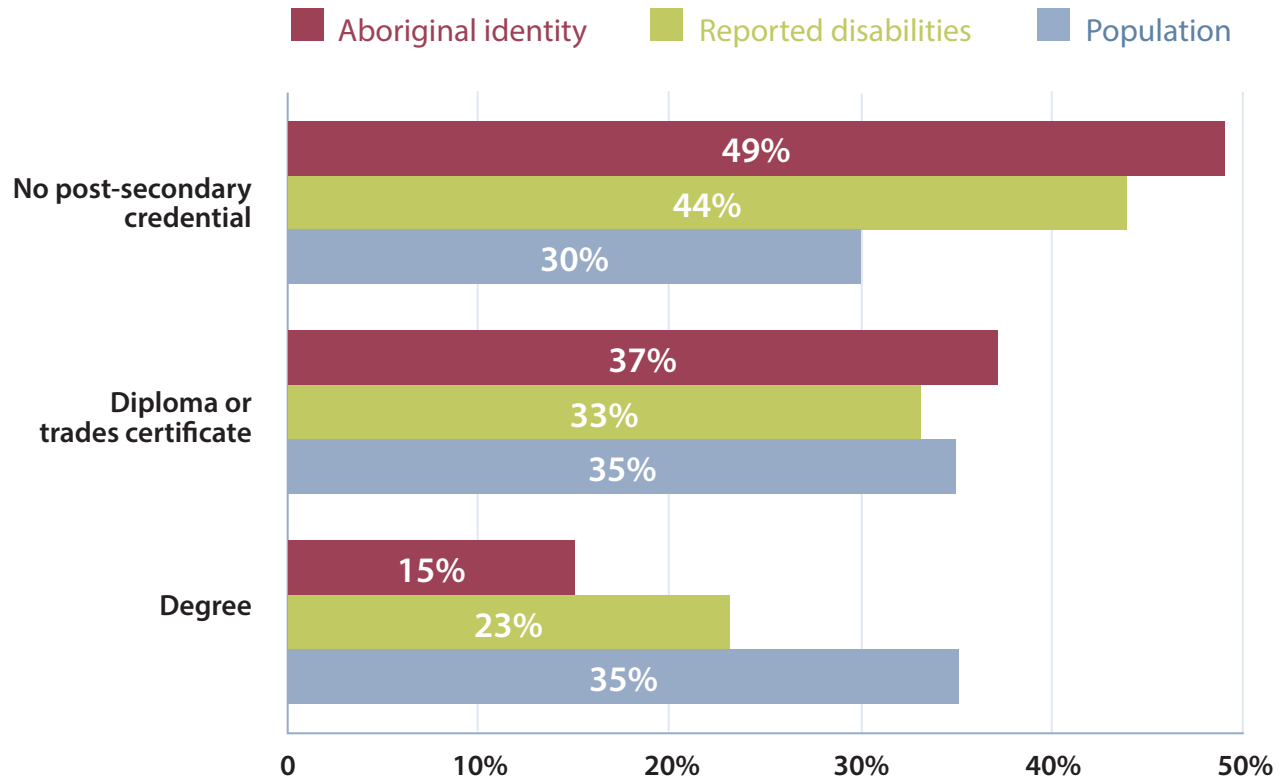
Source: Colleges Ontario based on Statistics Canada table 477-0054.

While the age distribution of apprentices varies considerably, both within and among provinces, the data suggest that the large majority of apprentices are adult learners.

This is especially the case in Ontario, where 85 per cent who complete their apprenticeships are 25 or older, and well over half are over 30 years old. Indeed, more than one-quarter of those completing apprenticeships in Ontario are over the age of 40.

In comparison, in British Columbia, more than half of apprentices complete their programs before they are 30, and only 11 per cent are over 40.

2.6 Educational attainment of underrepresented groups: Ontario, population ages 25 to 34, per cent, 2011



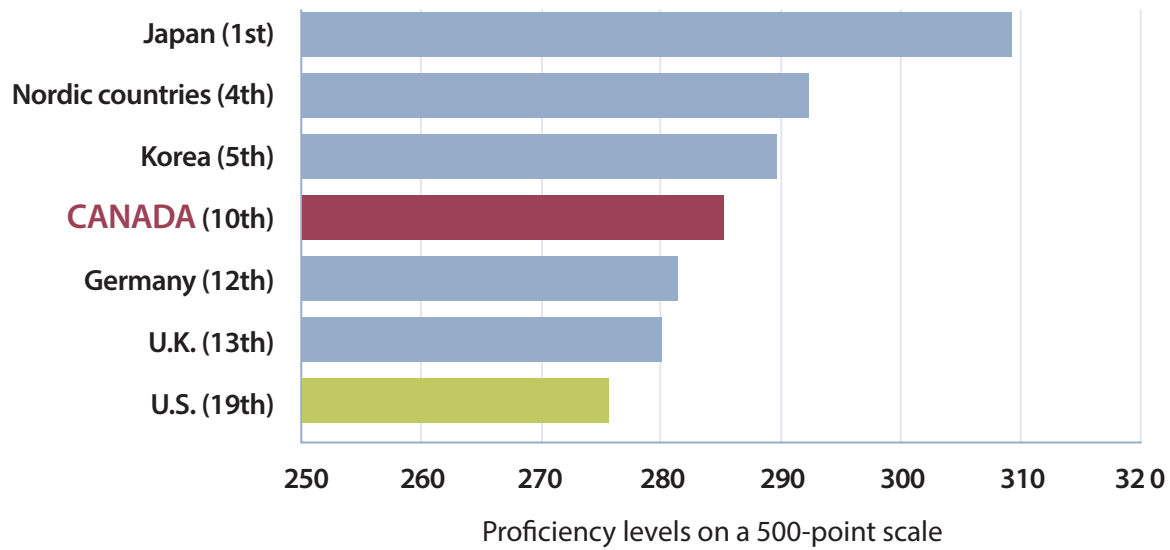
Source: Colleges Ontario, based on a Statistics Canada special tabulation, National Housing Survey, 2011.

Young Ontarians (ages 25 to 34) reporting disabilities or aboriginal identity are as successful in completing college diplomas or becoming certified tradespersons as other Ontarians.

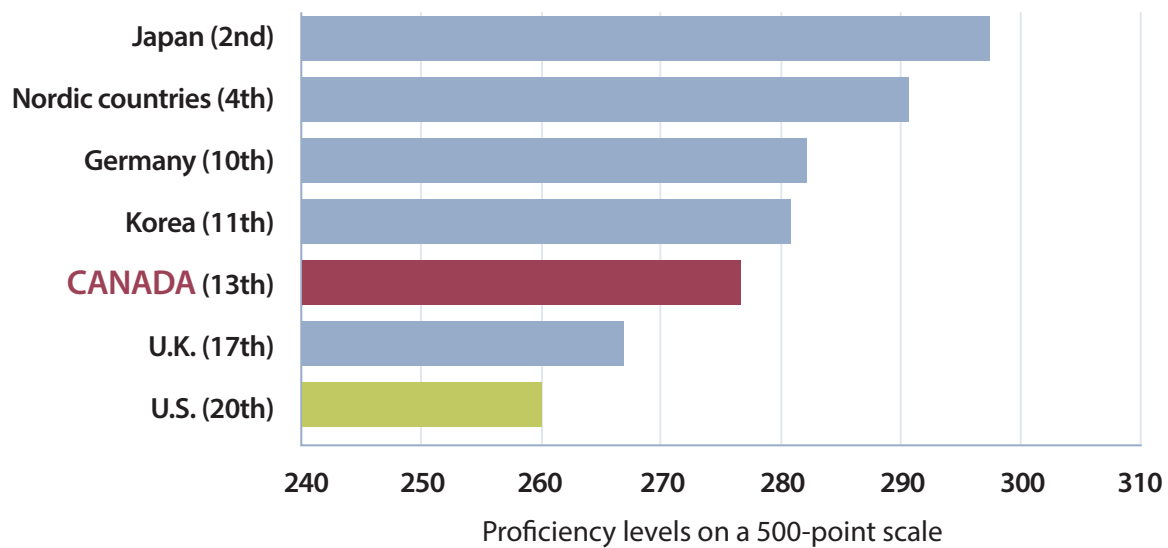
However, they fall far behind the general population in gaining degrees.

3 ESSENTIAL SKILLS AND WORKFORCE TRAINING

3.1 Adult literacy rating for selected countries, ages 25 to 34, 2012



3.2 Adult numeracy rating for selected countries, ages 25 to 34, 2012



Note: Nordic countries include Denmark, Finland, Norway and Sweden.

Source: OECD Skills Outlook 2013, tables A3.2 (L), Mean literacy proficiency and (N) Mean numeracy proficiency, (each) by 10-year age groups.

Literacy and numeracy are widely agreed to be essential skills for a good job and a solid career. As Statistics Canada states, “Given the centrality of written communication and basic mathematics in virtually all areas of life, coupled with the rapid integration of ICT, individuals must be able to understand, process, and respond to textual and numerical information, print and digital, if they are to participate fully in society — whether as citizens, family members, consumers, or employees.”¹

Canada participates in the Programme for the International Assessment of Adult Competencies (PIAAC), which provides internationally comparable measures of three skills that are essential to processing information: literacy, numeracy, and problem-solving in technology-rich environments.²

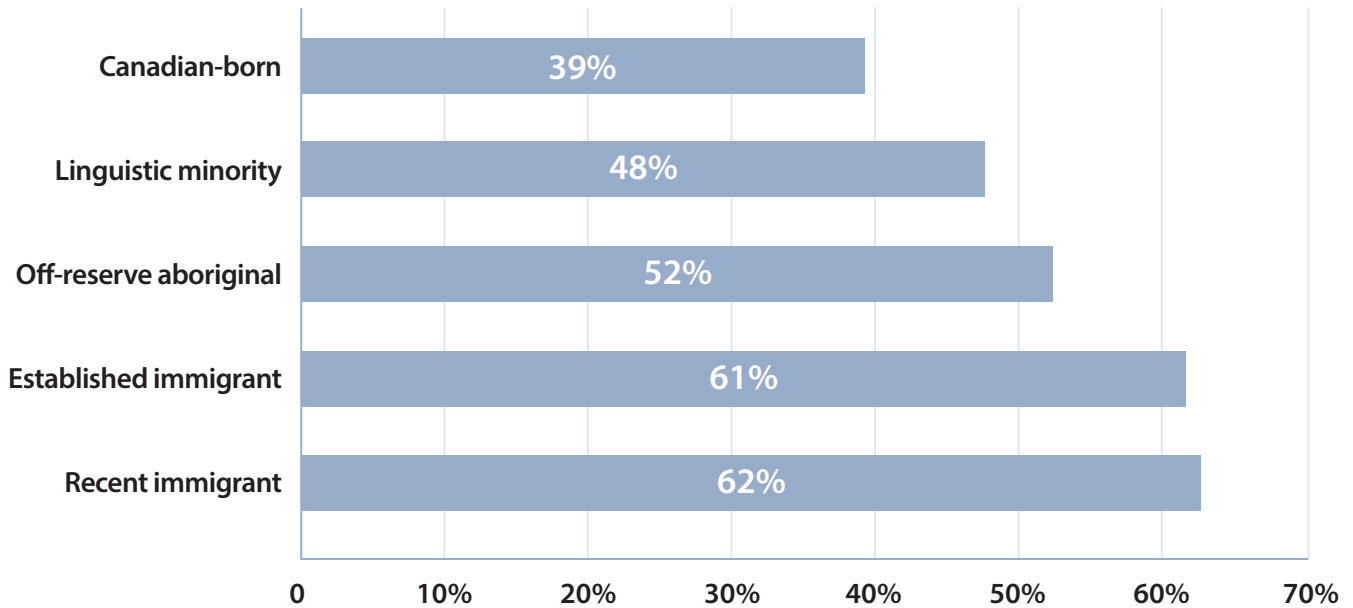
Canada’s average literacy and numeracy ratings for young adults (ages 25 to 34) are better than the average for the advanced countries assessed by the OECD, and better than the average for its major competitors – the U.S. and the U.K.

- Canada’s literacy average (in 10th place) is behind all the Nordic countries, Japan and Korea.
- Canada’s numeracy average (in 13th place) is behind all the Nordic countries, Japan, Germany and Korea.

¹Statistics Canada Skills in Canada: First Results from the Programme for the International Assessment of Adult Competencies (PIAAC) – Catalogue no. 89-555-X 2013.

²PIAAC defines six proficiency levels for each of literacy and numeracy and problem-solving in technology-rich environments: level 1 - low, to level 5 - high, plus “below level 1.”

3.3 Adult literacy and numeracy rating for selected Canadian populations, percentage scoring at or below level 2 in literacy and numeracy, 2012.



Source: Statistics Canada table 477-0087, based on the Programme for the International Assessment of Adult Competencies (PIAAC) 2012.

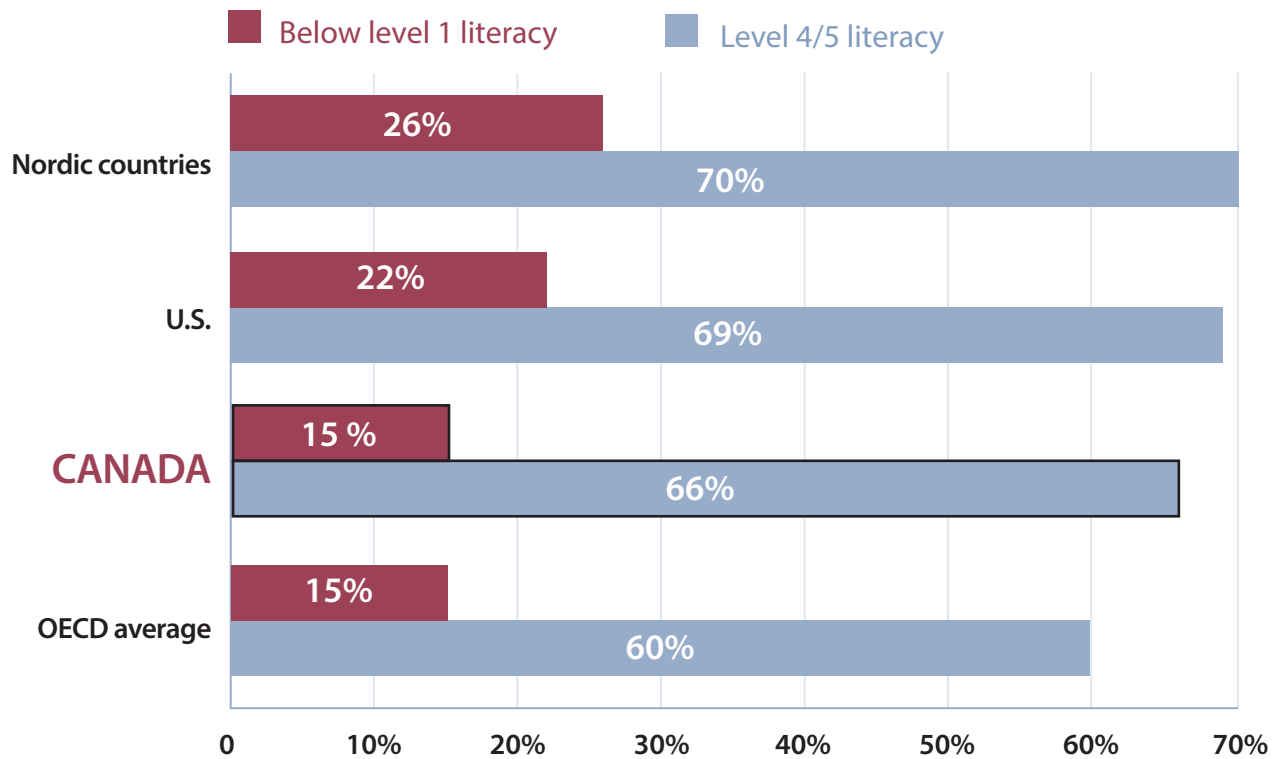
About two in five Canadian-born adults have only level two¹ or lower levels of literacy and numeracy. Many of these individuals may experience difficulties in their careers.

As the chart shows, underrepresented groups are much more likely than the strictly Canadian-born group to have levels of literacy and numeracy that are lower than what are often required for effective participation in today's workforce.

¹For example, tasks in level 2 literacy require respondents to make matches between the text and information, and may require paraphrasing or low-level inferences. Some competing pieces of information may be present. Some tasks require the respondent to:

- Cycle through or integrate two or more pieces of information based on criteria.
- Compare and contrast or reason about information requested in the question.
- Navigate within digital texts to access and identify information from various parts of a document.

3.4 Job-related adult education in selected countries, annual participation rates, by low and high literacy levels, per cent, 2012



Note: Nordic countries include Denmark, Finland, Norway and Sweden.

Source: OECD Skills Outlook 2013, figure 5.7 (L), Participation rate in adult education, by literacy proficiency levels.

In all advanced countries assessed by the OECD, a far higher per cent of adults at the highest essential skills levels participate in job-related adult education each year than those at low levels of essential skills.¹

- On average, across the OECD, 60 per cent of adults at the highest literacy level (4/5) are engaged in job-related adult education each year, while only 15 per cent of those at the lowest level (below level 1) are engaged.
- In Canada, the spread is wider – 66 per cent at the highest literacy level are engaged in job-related adult education each year, with 15 per cent at the lowest level engaged.
- The Nordic countries (at 26 per cent) and the U.S. (at 22 per cent) are more successful than Canada in providing job-related training to those at the lowest levels of essential skills.

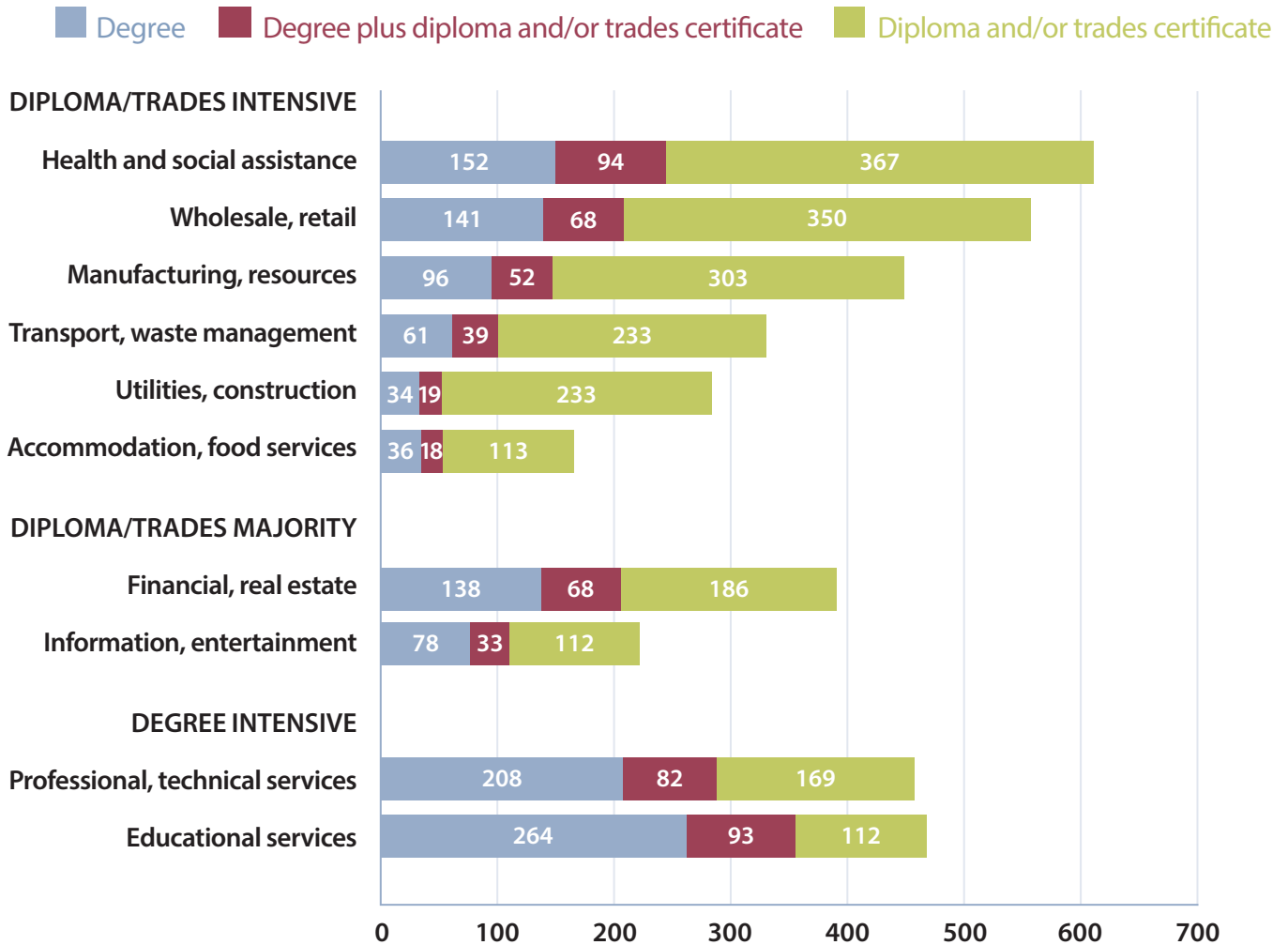
¹At below level 1, “only basic vocabulary knowledge is required, and the reader is not required to understand the structure of sentences or paragraphs or make use of other text features. Tasks below level 1 do not make use of any features specific to digital texts.”

At the highest level (5), “tasks may require the respondent to search for and integrate information across multiple, dense texts; construct syntheses of similar and contrasting ideas or points of view; or evaluate evidence based arguments. Application and evaluation of logical and conceptual models of ideas may be required to accomplish tasks. Evaluating reliability of evidentiary sources and selecting key information is frequently a key requirement. Tasks often require respondents to be aware of subtle, rhetorical cues and to make high-level inferences or use specialized background knowledge.”

In Canada, six per cent of the population has below level 1 literacy, while 11 per cent have level 4 and one per cent have level 5 literacy.

4 POST-SECONDARY GRADUATES AND THE ECONOMY

4.1 Post-secondary graduates employed in Ontario industries, '000s, 2011



Source: Colleges Ontario, based on a Statistics Canada special tabulation, National Housing Survey, 2011.

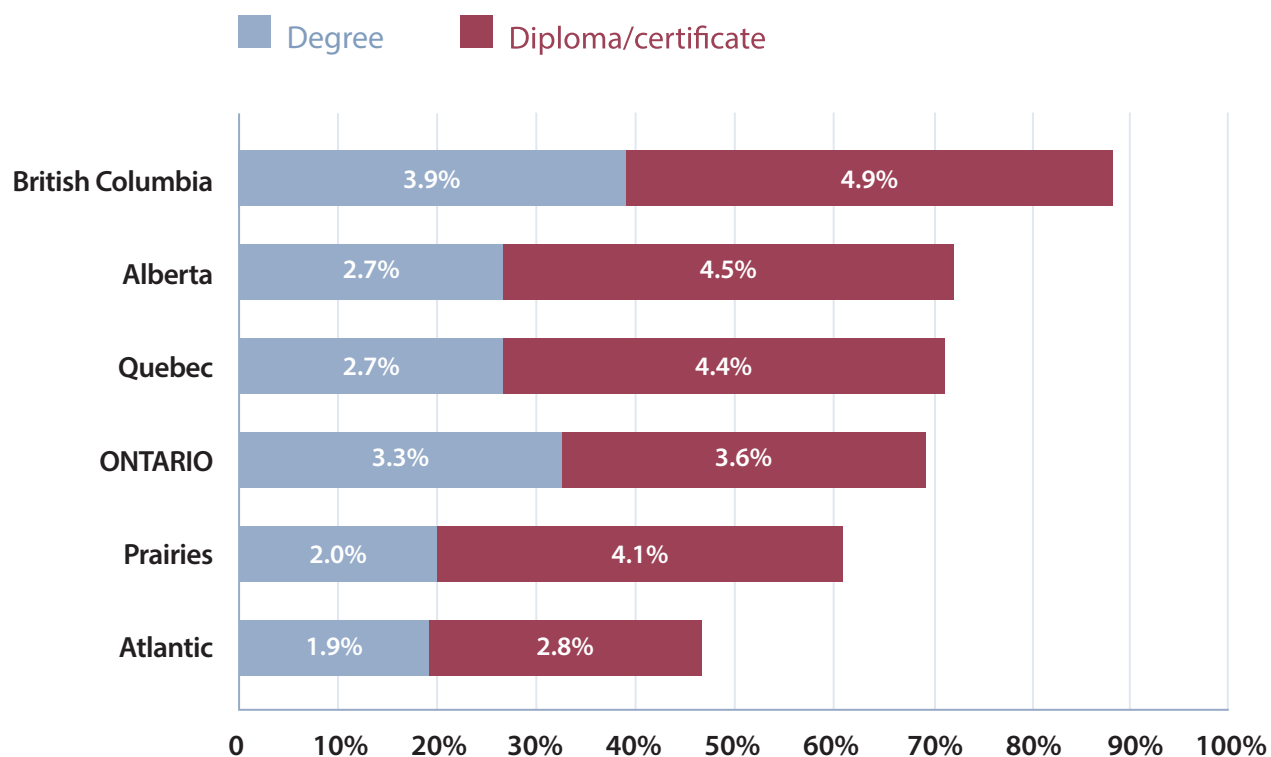
Ontario's diploma and trades graduates play a critical role in export industries (manufacturing, resources and tourism), electric power generation and transmission, infrastructure, real estate, insurance, and health care.

A recent survey of more than 1,500 employers, which employ 13.5 per cent of Ontario's workforce, found that "smaller firms (one to 19 employees) have the greatest need for two- or three-year college diplomas, followed by trades and four-year degrees."¹

The broader public sector (educational services, health and social services, and public administration) and the professional, scientific and technical services sector each employ twice the concentration of degrees as the private sector.

¹ The Conference Board of Canada, *The Need to Make Skills Work: The Cost of Ontario's Skills Gap*, 2013, p. 20.

4.2 Self-employed by post-secondary credential as a per cent of total employment, 2011



Note: "Self-employed" includes those with and without employees.

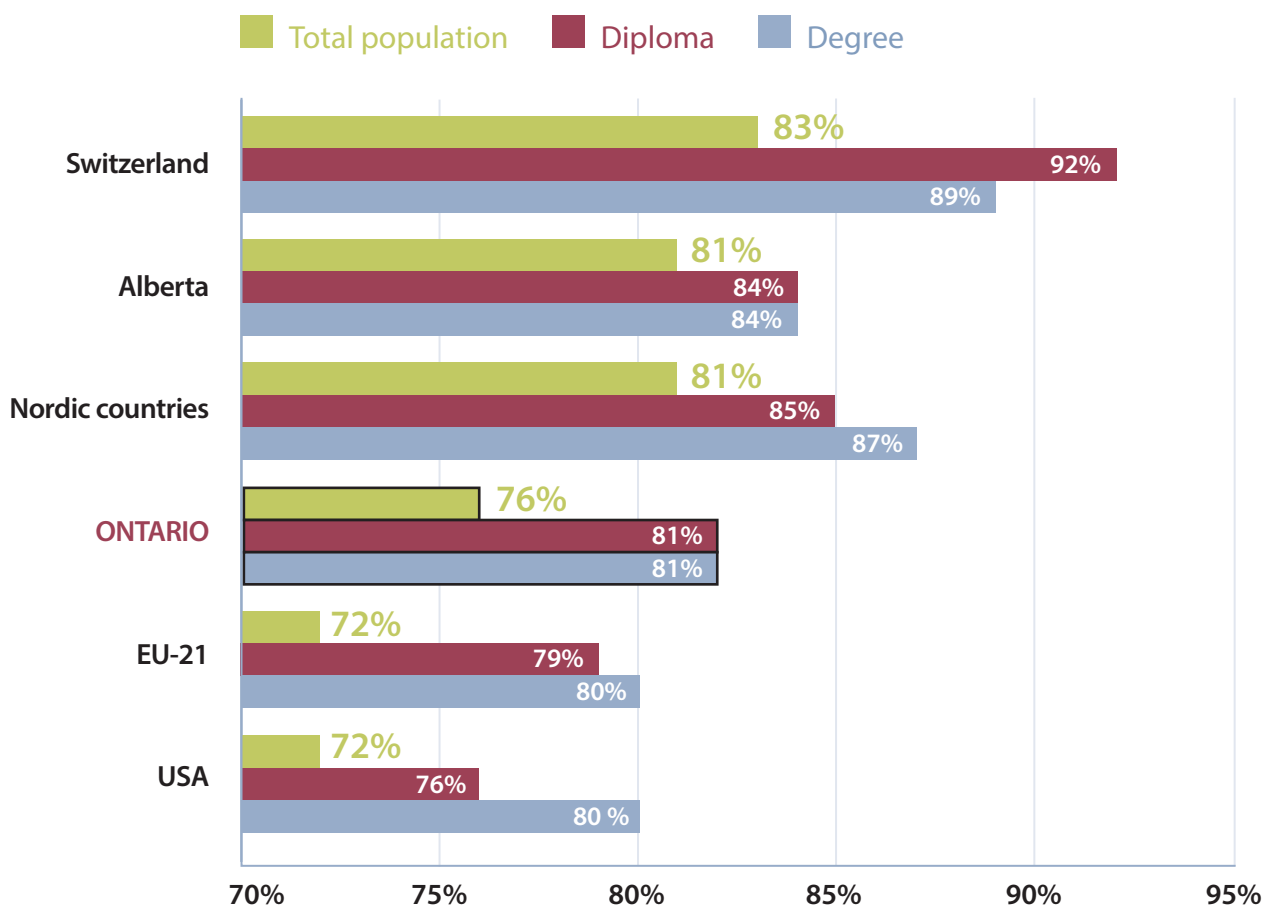
Source: Colleges Ontario, based on a Statistics Canada special tabulation, 2011 National Housing Survey.

Across Canada, seven per cent of those working are self-employed and have obtained a post-secondary credential.

Ontario has slightly below the average per cent of entrepreneurs with a post-secondary credential, while British Columbia is a leader.

5 MATCHING SKILLS TO JOBS

5.1 Employment rates, by post-secondary credential, selected jurisdictions, ages 25 to 64, per cent, 2011



Note 1: Ranked by employment rate for total population.

Note 2: Nordic countries include Denmark, Finland, Iceland, Norway and Sweden.

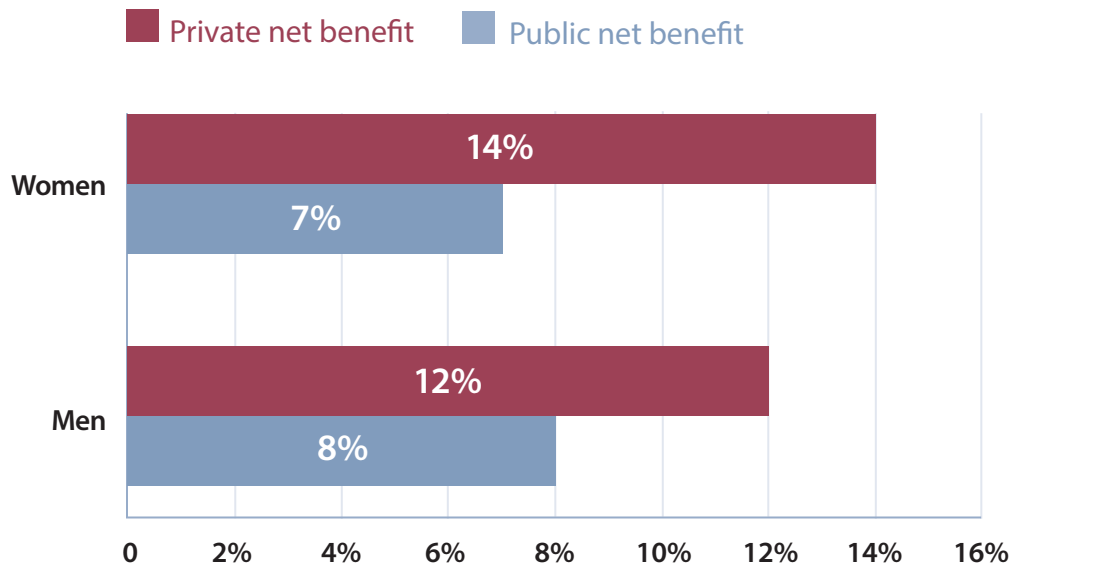
Note 3: Europe includes Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

Sources: OECD Education at a Glance 2015, table A5.1a, Employment rates among 25-64 year-olds, by educational attainment (2014 data); Statistics Canada Labour Force Survey, table 282-0004 (2014 data).

For every country in the OECD, employment levels for those (ages 25 to 64) with post-secondary credentials are higher than for those without.

- Ontario's ability to match skills to job opportunities (76 per cent employed) would rank in 13th place among advanced economies if it were a country.
- A dozen countries, notably Switzerland (83 per cent), the Nordic countries (averaging 81 per cent) and Germany (79 per cent) – highly regarded for their ability to match educational programs with employer requirements – are better at addressing skills mismatches.
- Within Canada, Alberta (81 per cent) is the most successful and would rank in fourth place if it were a country.

5.2 Net benefits for Canadians attaining tertiary education, Canada, per cent, 2011



Note 1: Net benefits are calculated as an internal rate of return.

Note 2: These data exclude OECD-defined "post-secondary non-tertiary," i.e., post-secondary programs of one year or less, and many apprenticeship programs, that are generally included in Statistics Canada data.

Source: OECD Education at a Glance 2015, tables A7.3a, A7.3b, A7.4a and A7.4b.

The OECD states that :

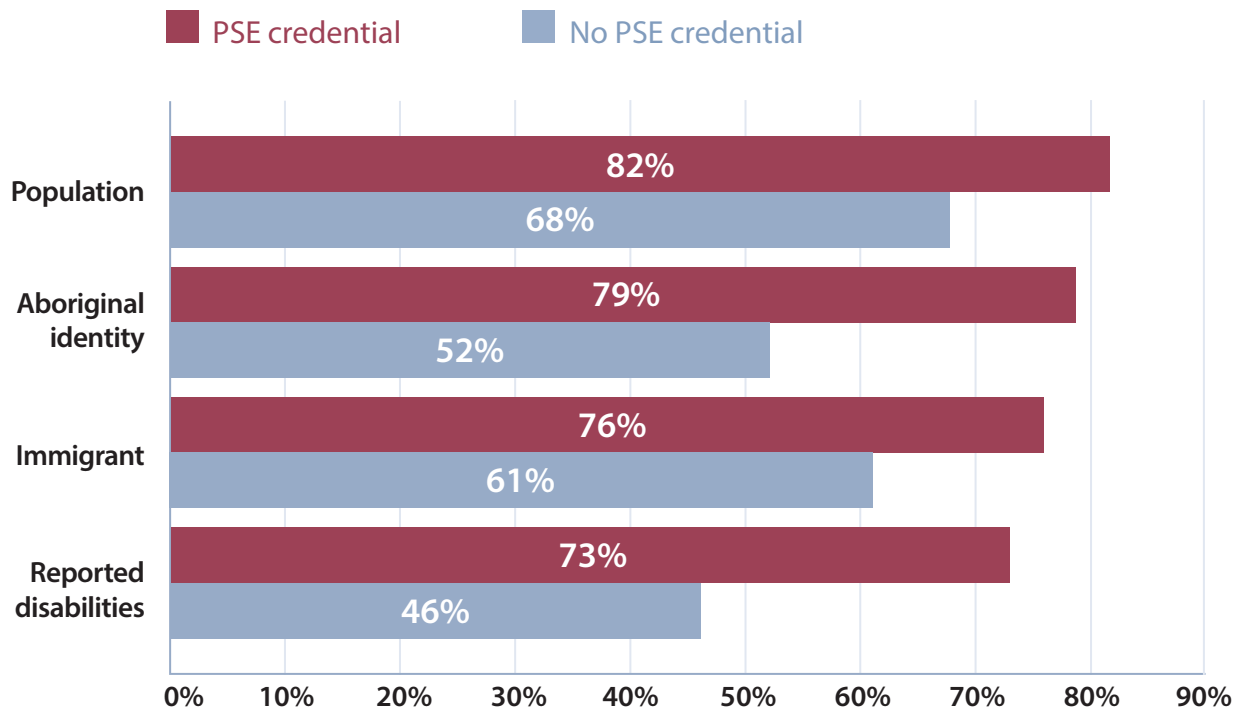
- "Individuals completing tertiary education benefit from substantial returns on investment: they are more likely to be employed and earn more than individuals without tertiary education do."
- "The public also benefits from a large proportion of tertiary-educated individuals through greater tax revenues and social contributions."

For Canada as a whole, the OECD calculates that both individuals and governments receive roughly a 10 per cent rate of return on their investments in post-secondary education.

Another study concluded that Ontario college students receive an internal rate of return of 14 per cent for the time and money they invest in an education, while the Ontario government receives an internal rate of return of 20 per cent. A third study, focused on special programs for Ontario college students at risk, concluded that the returns to students and Ontario government, respectively, were 11 and 14 per cent for these programs alone.

Sources: OECD Education at a Glance 2015, page 150; Economic Modeling Specialists Intl., Demonstrating the value of the Ontario college sector: Analysis of the economic impact and return on investment of education, 2014, page 11; Deloitte, Breaking Down Barriers to Student Success: Expanding a High-Performance Workforce, 2012.

5.3 Employment rates for underrepresented groups, Ontario, by educational attainment, population ages 25-34, per cent, 2011



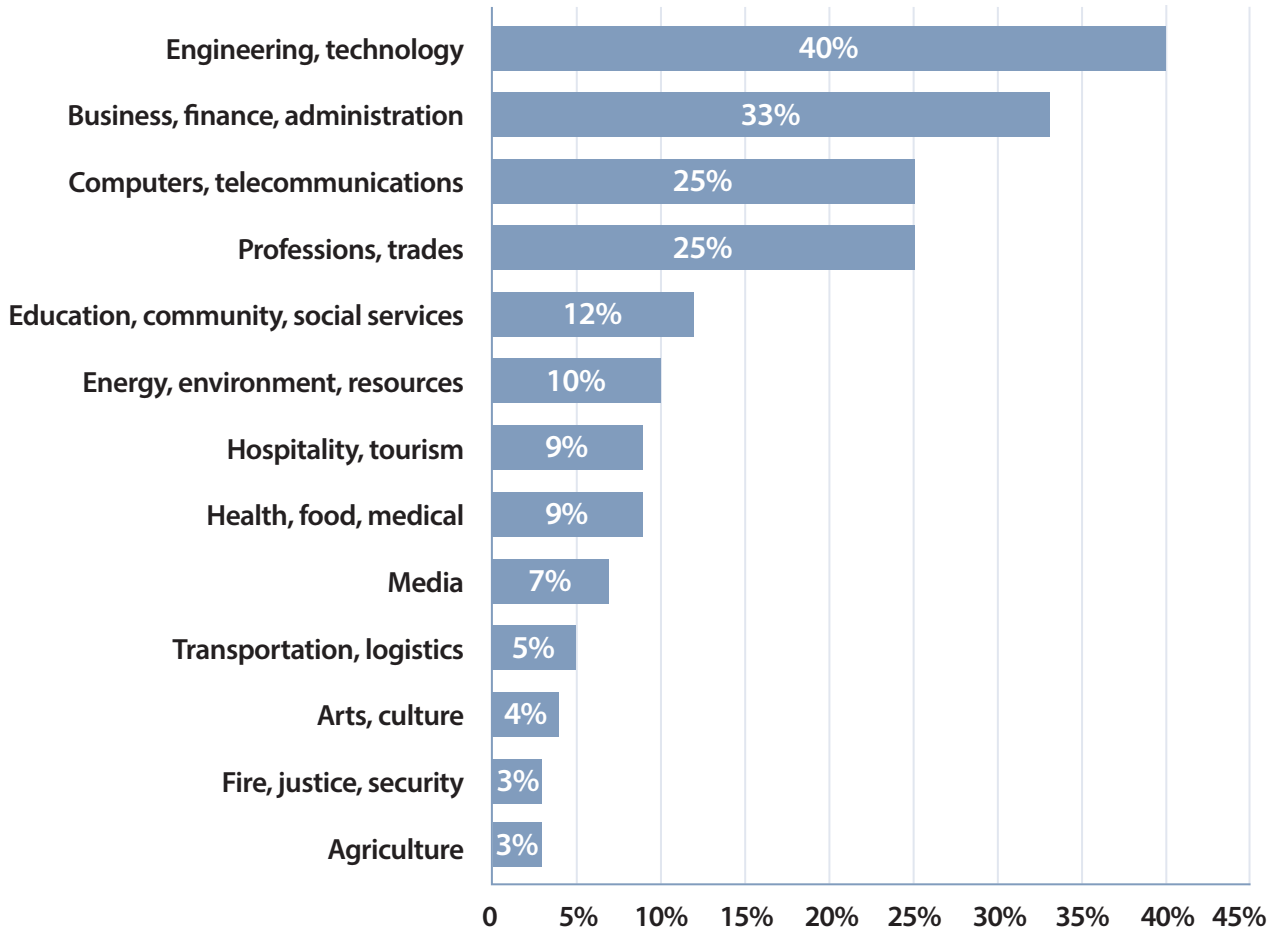
Source: Colleges Ontario, based on a Statistics Canada special tabulation, National Housing Survey, 2011.

Young adults (ages 25-35) in underrepresented groups generally experience lower employment rates than the general Ontario population, even when educational attainment is taken into account.

Those with a post-secondary education credential and reporting aboriginal identity, immigrant, or disabilities status are between three and nine percentage points less likely to be employed than are Ontarians generally.

The difference is especially great for young adults without post-secondary credentials as the gap ranges from seven to 22 percentage points

5.4 Ontario employers' plans to hire diploma graduates as the economy recovers, per cent, 2013



Note: The Conference Board of Canada conducted an Ontario employer skills survey of 1,500 employers, which represent 15.5 per cent of Ontario employment. The table lists the top priorities for the 57 per cent of employers who planned to hire employees with two- or three-year college diplomas.



Source: The Conference Board of Canada, *The Need to Make Skills Work: The Cost of Ontario's Skills Gap*, 2013.

As the chart shows, Ontario employers plan to hire a wide range of college graduates as the economy recovers. The Conference Board of Canada¹ further notes that:

- Three-quarters of Ontario employers expect to upgrade skill requirements over the next decade.
- The inability to hire specialized skills will have significant consequences, ranging from reduced productivity, quality and sales to less innovation and lower profits.

This challenge is worldwide: Lack of skills is the main reason for entry-level vacancies for almost 40 per cent of employers in nine countries,² and worldwide, "Many employers are nearing a point at which it will be extremely difficult to meet the demand for skilled employees."³

¹ The Conference Board of Canada, *The Need to Make Skills Work: The Cost of Ontario's Skills Gap*, 2013.

² McKinsey Center for Government, *Education to Employment: Designing a System that Works*, 2013.

³ The Boston Consulting Group, *Turning the Challenge of an Older Workforce into a Managed Opportunity*, 2011.